WM-FS399/FS400

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model
WM-FS399/FS400
UK Model
WM-FS399

Photo: WM-FS399

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
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Model Name Using Similar Mechanism	WM-FX433/FX435
Tape Transport Mechanism Type	MF-WMFX433-114

SPECIFICATIONS

Radio Frequency
FM : 87.5 – 108 MHz (0.05 MHz)(Italian Model)
: 87.6 – 107.9 MHz (0.05 MHz step)(AEP,E Model)
: 87.6 – 108 MHz (0.1 MHz step)(US, Canadian, Model)
AM : 526.5 – 1,606.5 kHz (9 kHz step)(Italian, Model)
: 530 – 1,710 kHz (10 kHz step)(US, Canadian Model)
: 531 – 1,602 kHz (9 kHz step)(AEP, UK, E Model)

Power Requirements
• 3V DC Batteries AA (R6) x 2

Battery Life (approximate hours)

Battery	Playback	Radio
Sony Alkaline LR6 (SG)	18 hours	30 hours
Sony R6P (SR)	5 hours	15 hours

Dimensions
99.7 x 117.4 x 41.0 mm (4 x 4 5/8 x 1 5/8 in.) (w/h/d)
icl. projecting parts

Mass
265 g (9.4 oz) incl. batteries

Supplied Accessories
• Stereo headphones (1)
• Belt clip (1)
• Hand strap (1)
• Strap loop (1)

Design and specifications are subject to change without notice.

RADIO CASSETTE PLAYER

SONY®

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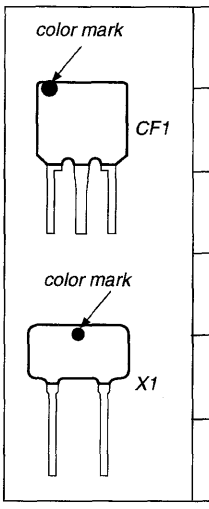
HOW TO CHANGED THE CERAMIC FILTERS

This model is used two ceramic filters of CF1, X1. You must used same type of color marked ceramic filters in order to meet same specifications.

Therefore, the ceramic filter must changed two pieces together since it's supply two pieces in one package as a spare parts.



color mark	Center Frequency
red	10.70MHz
blue	10.67MHz
orange	10.73MHz
black	10.64MHz
white	10.76MHz

Notes on chip component replacement

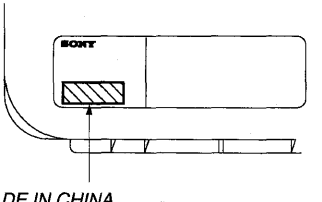
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

• How to identify TYPE 1 and TYPE 2 for E model

– SPECIFICATION LABEL –



MADE IN CHINA
SONY. CORP. *: TYPE 1*

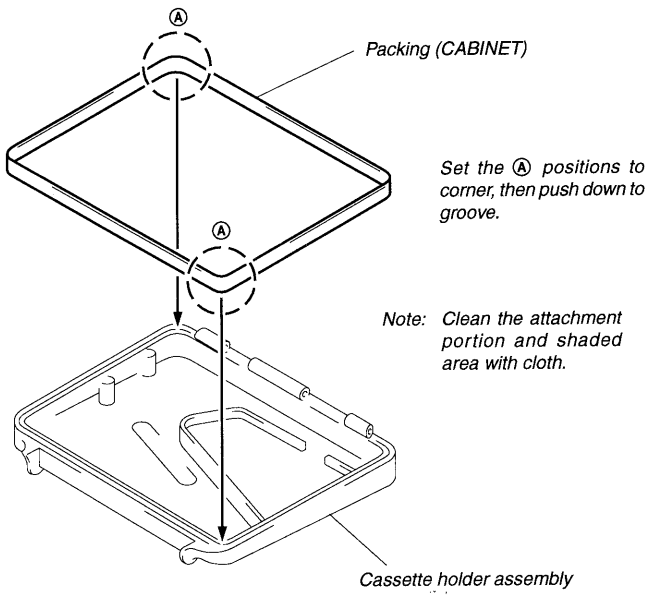
(NOTHING) *: TYPE 2*

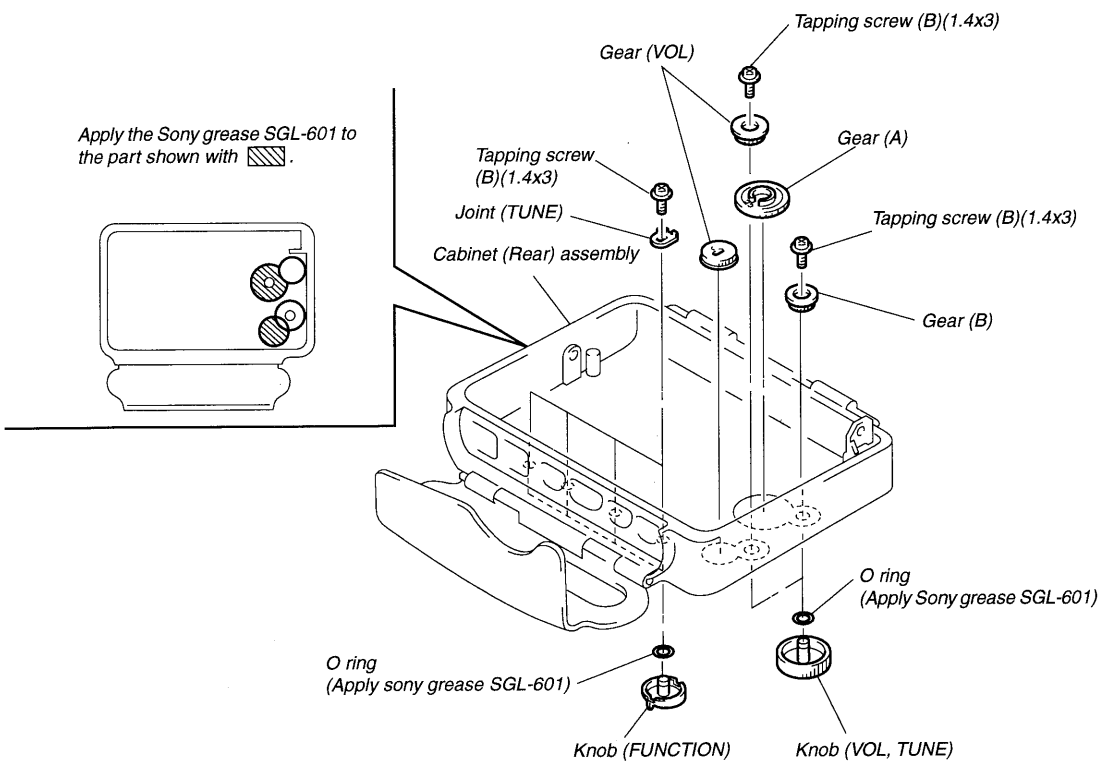
SECTION 1
SERVICING NOTE

WATERPROOFED SECTION

Note: In case the parts in the figure are removed for repair, treat them to protect from water drop following the instructions in the figure (spread grease, bond etc.).

- Sony grease SGL-601: 7-651-000-10


Ⓐ
Packing (CABINET)
Set the Ⓐ positions to corner, then push down to groove.
Note: Clean the attachment portion and shaded area with cloth.
Cassette holder assembly



SECTION 2
GENERAL

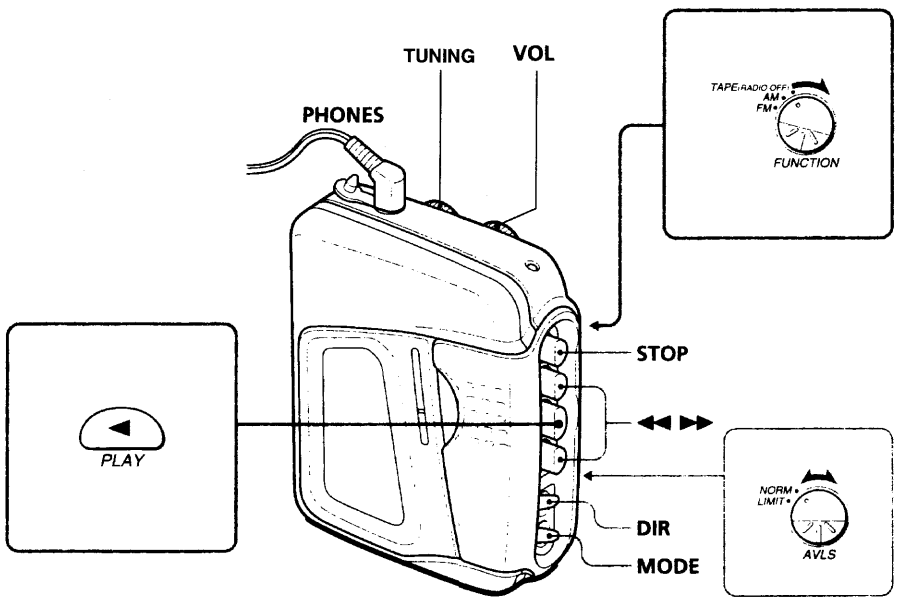
This section is extracted from instruction manual.

◀◀ ▶▶
Wind rapidly

■ STOP
Stop

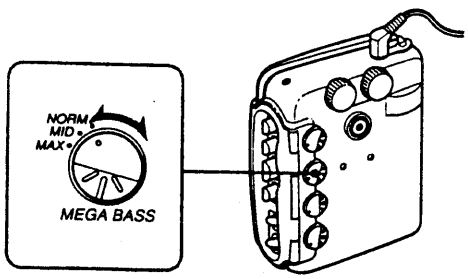
DIR
Change sides

MODE
Play both sides once ⇄/repeatedly ⇆.



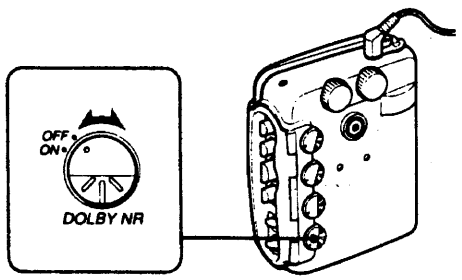
MEGA BASS

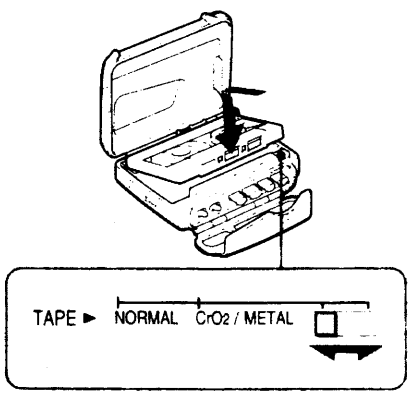
For deep and powerful sound



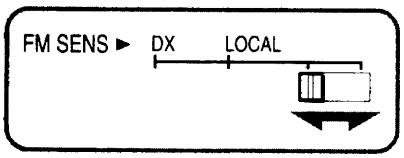
DOLBY NR

Play DOLBY NR processed tapes

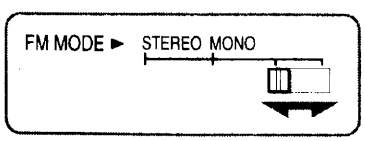




US, Canadian model



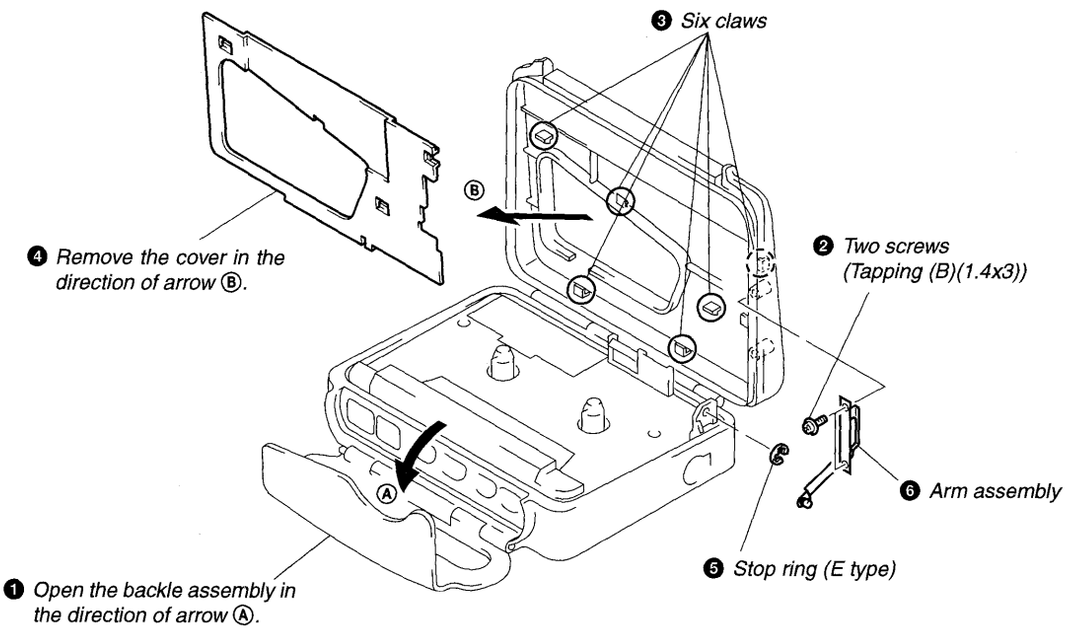
AEP, UK, E, Italian model



SECTION 3
DISASSEMBLY

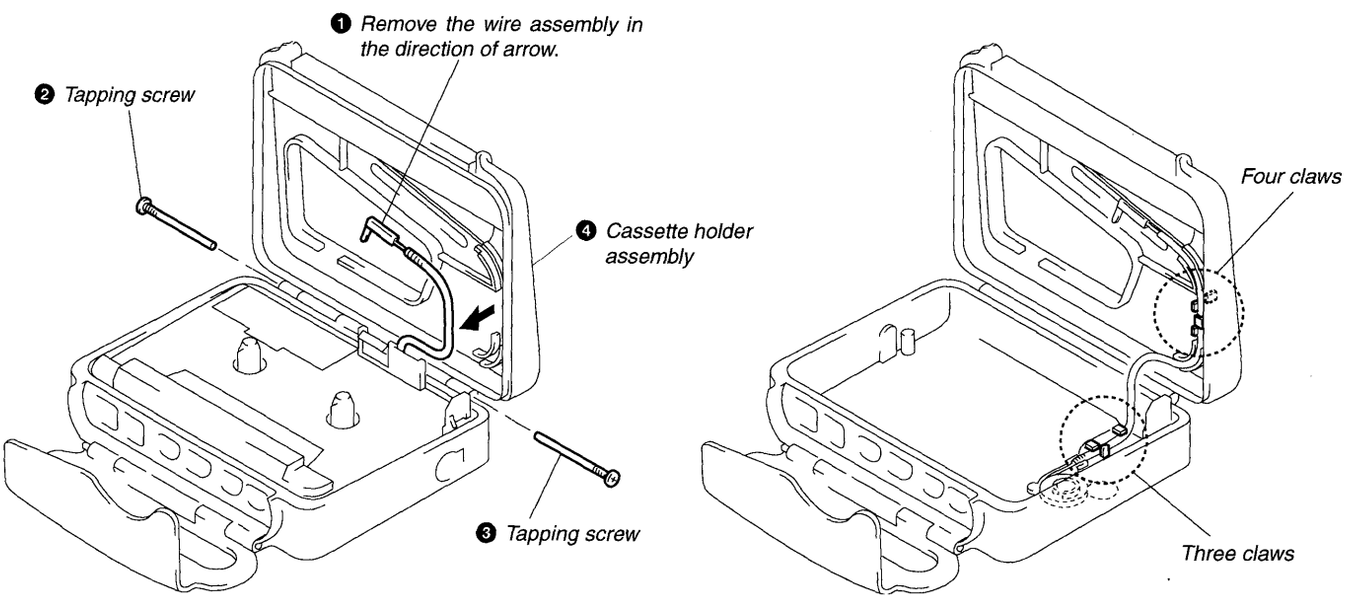
Note: Follow the disassembly procedure in the numerical order given.

3-1. COVER AND ARM ASSEMBLY

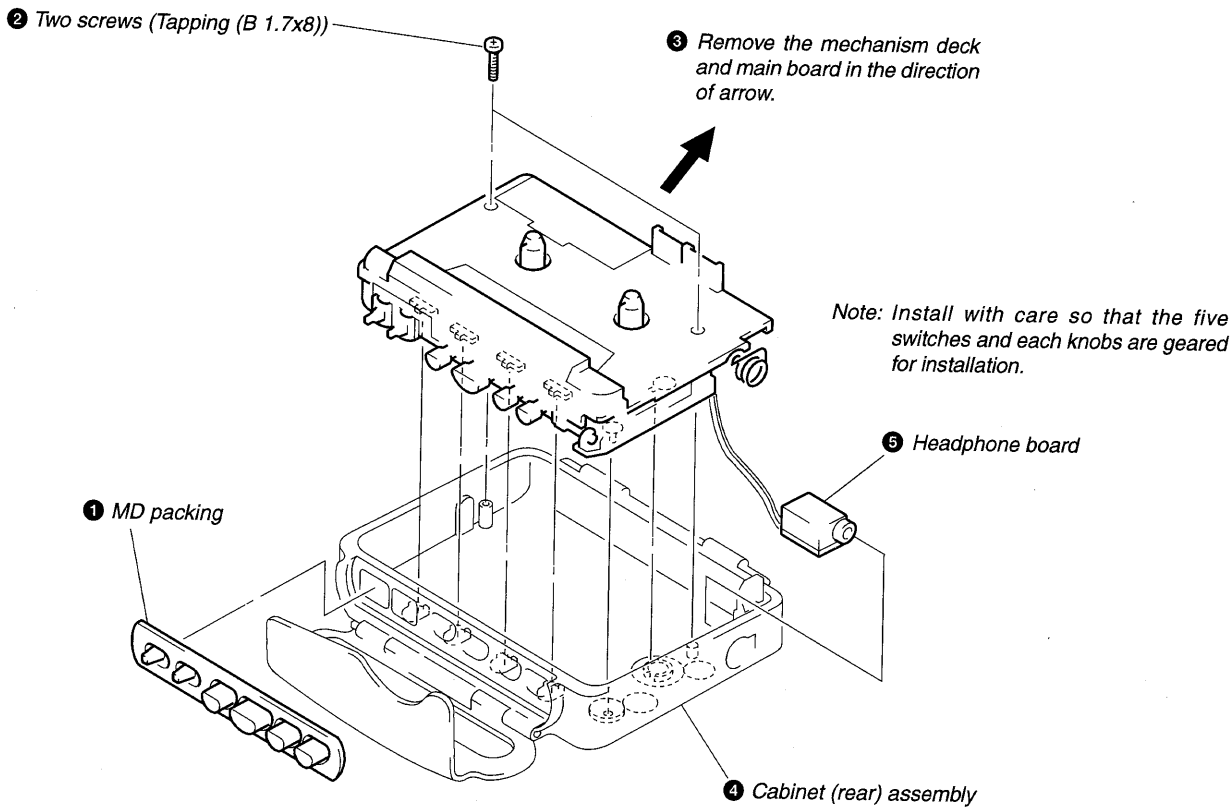

❸ Six claws
Ⓑ
❹ Remove the cover in the direction of arrow Ⓑ.
❷ Two screws (Tapping (B)(1.4x3))
Ⓐ
❻ Arm assembly
❺ Stop ring (E type)
❶ Open the backle assembly in the direction of arrow Ⓐ.

3-2. CASSETTE HOLDER ASSEMBLY

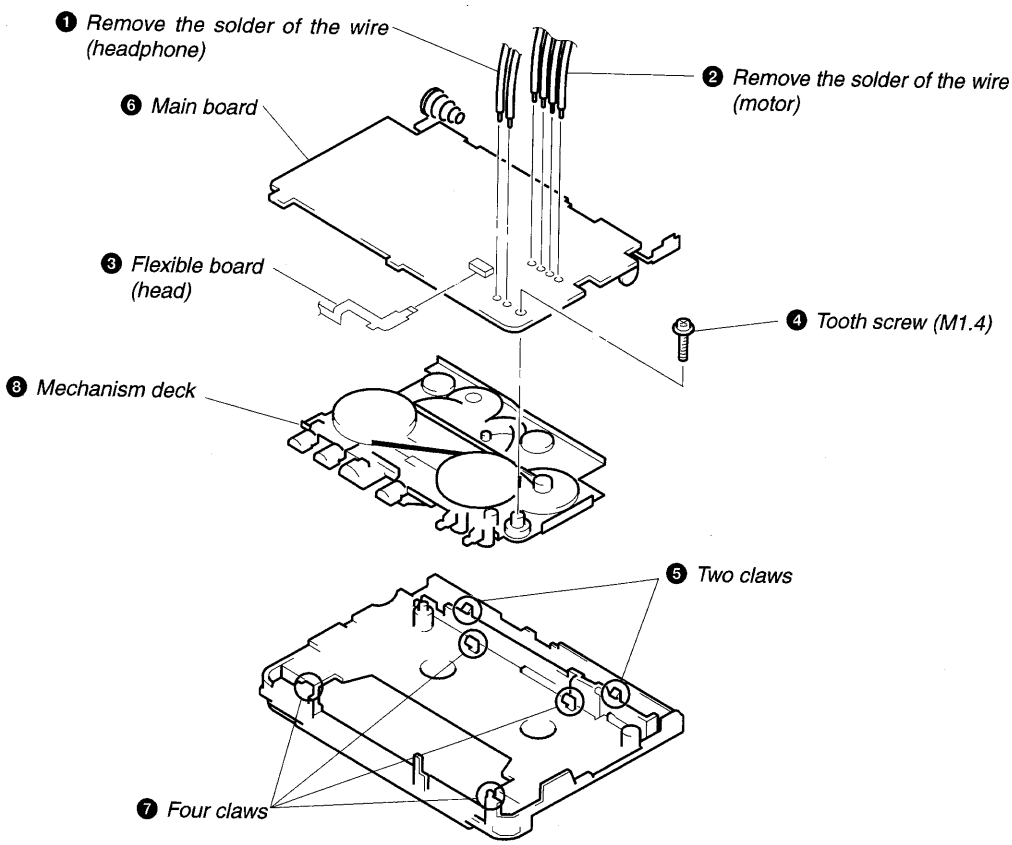
Note:
Pull around the wire assembly through the seven claws as shown in the figure for installation.


❶ Remove the wire assembly in the direction of arrow.
❷ Tapping screw
❹ Cassette holder assembly
❸ Tapping screw
Four claws
Three claws

3-3. CABINET (REAR) ASSEMBLY


❷ Two screws (Tapping (B 1.7x8))
❸ Remove the mechanism deck and main board in the direction of arrow.
Note: Install with care so that the five switches and each knobs are geared for installation.
❺ Headphone board
❶ MD packing
❹ Cabinet (rear) assembly

3-4. MAIN BOARD AND MECHANISM DECK


❶ Remove the solder of the wire (headphone)
❷ Remove the solder of the wire (motor)
❻ Main board
❸ Flexible board (head)
❹ Tooth screw (M1.4)
❽ Mechanism deck
❺ Two claws
❼ Four claws

SECTION 4
ADJUSTMENTS

4-1. MECHANICAL ADJUSTMENTS

Precaution

1. Clean the follwing parts with a denatured-alcohol-moistened swab :
   playback head pinch roller
   capstan rubber belts
2. Demagnetize the playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage (2.5 V) unless otherwise noted.

Torque Measurement

Mode	Torque meter	Meter reading
FWD	CQ-102C	20-42 g-cm (0.28-0.58 oz-inch)
FWD Back Tension		less than 2 g-cm (less than 0.03 oz-inch)
REV	CQ-102RC	20-42 g-cm (0.28-0.58 oz-inch)
REV Back Tension		less than 2 g-cm (less than 0.03 oz-inch)
FF, REW	CQ-201B	more than 60 g-cm (more than 0.83 oz-inch)

Tape Pulling Force Measurement

Mode	Torque meter	Meter reading
FWD	CQ-403A	more than 40g (more than 1.4 oz)
REV	CQ-403R	

4-2. ELECTRICAL ADJUSTMENTS

Precaution

- Supplied voltage : 2.5V
- Switch and control position
  TAPE switch : NORMAL
  MEGA BASS switch : NORM
  VOLUME control : maximum
  AVLS switch : NORM
  DOLBY NR switch : OFF

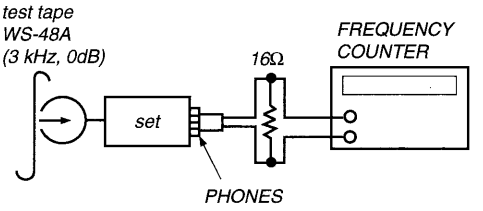
TAPE SECTION

- Function switch : TAPE

Test tape

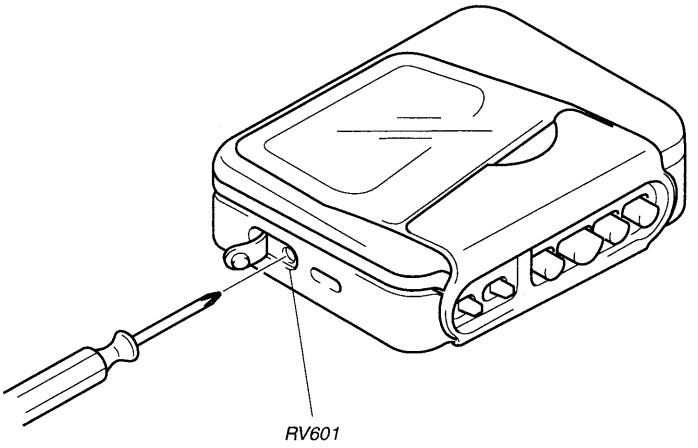
Type	Signal	Used for
WS-48A	3kHz, 0dB	Tape Speed Adjustment

Tape speed adjustment



Procedure:
Play back WS-48A (tape center portion) in reverse mode.
Adjust the RV601 so that the frequency counter reads 2,985Hz ± 15Hz.
Frequency difference between the begining and the end of the tape should be within ± 1.5%.

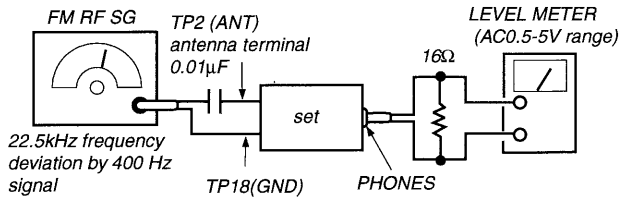
Adjustment Location:



RADIO SECTION

FM section

- Function switch : FM
- FM SENS switch : DX (US, Canadian model)
- FM MODE switch : STEREO (Except US, Canadian model)



Repeat the procedure in each adjustment several times since L (3, 2) affects CT (3, 2) and CT (3, 2) affects L (3, 2). Both the frequency coverage and tracking adjustments should end with the final adjustment of the trimmer capacitors.

FM Frequency Coverage Adjustment

Pointer position	SG frequency	Adjustment part	Reading on LEVEL METER
f minimum	86 .5MHz [87.35MHz]	L3	maximum
f maximum	109.5MHz [108.25MHz]	CT3	

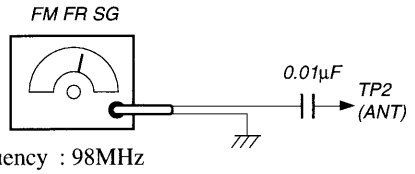
[ ] : Italian model

FM Tracking Adjustment

SG and set frequency	Adjustment part	Reading on LEVEL METER
86.5MHz [87.35MHz]	L2	maximum
109.5MHz [108.25Mhz]	CT2	

[ ] : Italian model

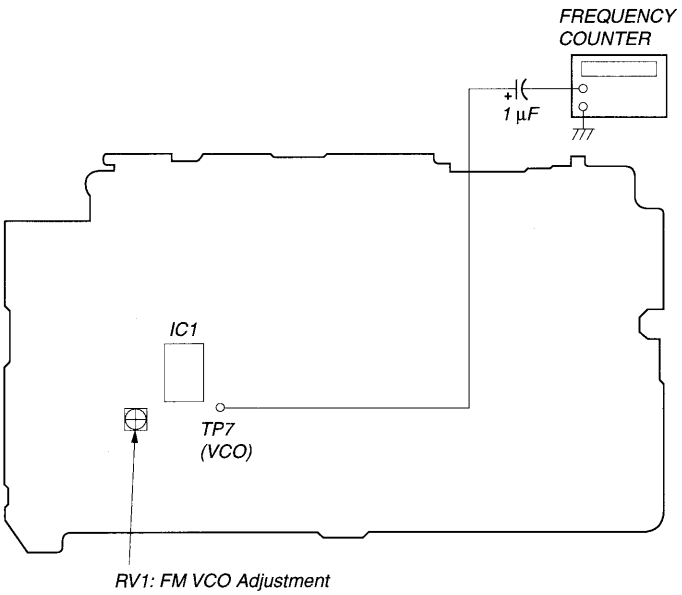
FM VCO ADJUSTMENT



Carrier frequency : 98MHz
Modulation : no modulation
Output level : 55dB (562µV)

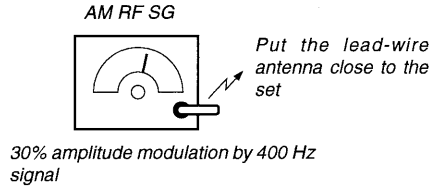
1. Connect the frequency counter to TP7 and Ground as shown the figure below.
2. Tune the to 98 MHz.
3. Adjust RV 1 for 76 kHz ± 50 Hz reading on frequency counter.

[MAIN BOARD] – Conductor side –

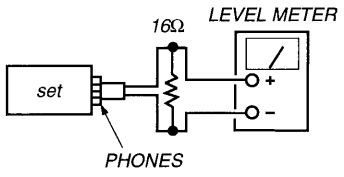


AM section

• Function switch: AM



Repeat the procedure in each adjustment several times since L (4, 1) affects CT (4, 1) and CT (4, 1) affects L (4, 1). Both the frequency coverage and tracking adjustments should end with the final adjustment of the trimmer capacitors.



AM IF Adjustment

SG and set frequency	Adjustment part	Reading on LEVEL METER
455 kHz	T1	maximum

AM Frequency Coverage Adjustment

Pointer position	SG frequency	Adjustment part	Reading on LEVEL METER
f minimum	520kHz (520kHz) [516.5kHz]	L4	maximum
f maximum	1,680kHz (1,750kHz) [1631.5kHz]	CT4	

( ) : US, Canadian models

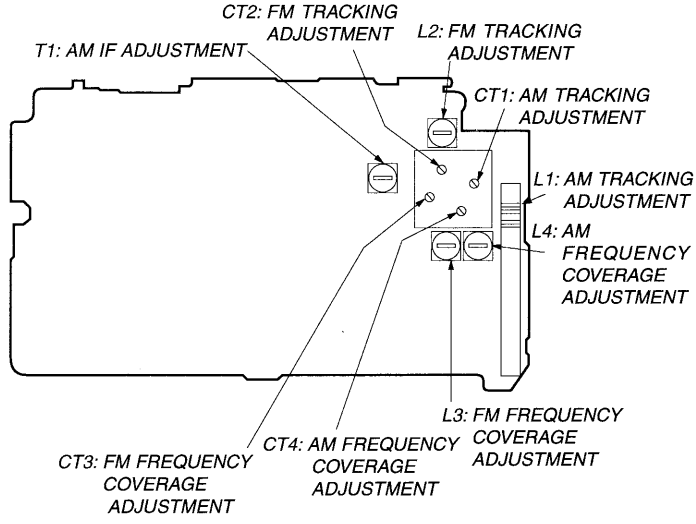
[ ] : Italian model

AM Tracking Adjustment

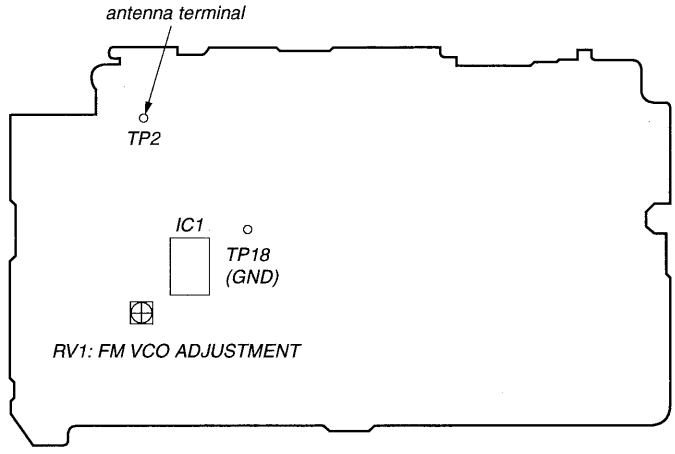
SG and set frequency	Adjustment part	Reading on LEVEL METER
620kHz	L1	maximum
1,400kHz	CT1	

Adjustment Part Location Diagram:

[MAIN BOARD] – Component side –


CT2: FM TRACKING ADJUSTMENT
L2: FM TRACKING ADJUSTMENT
T1: AM IF ADJUSTMENT
CT1: AM TRACKING ADJUSTMENT
L1: AM TRACKING ADJUSTMENT
L4: AM FREQUENCY COVERAGE ADJUSTMENT
L3: FM FREQUENCY COVERAGE ADJUSTMENT
CT3: FM FREQUENCY COVERAGE ADJUSTMENT
CT4: AM FREQUENCY COVERAGE ADJUSTMENT

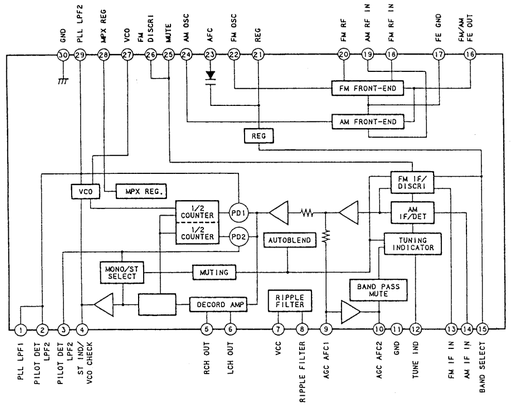
[MAIN BOARD] – Conductor side –



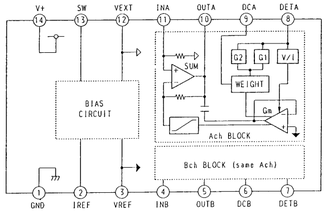
SECTION 5
DIAGRAMS

• IC BLOCK DIAGRAMS

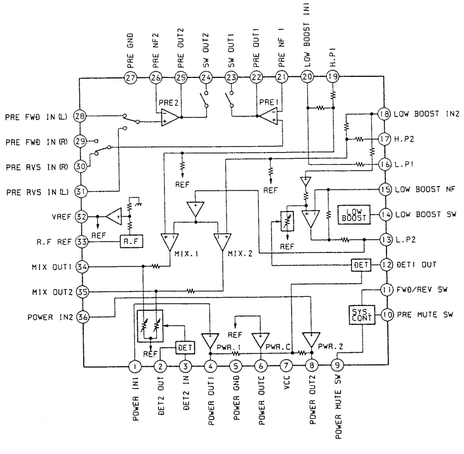
IC1 CXA1538N



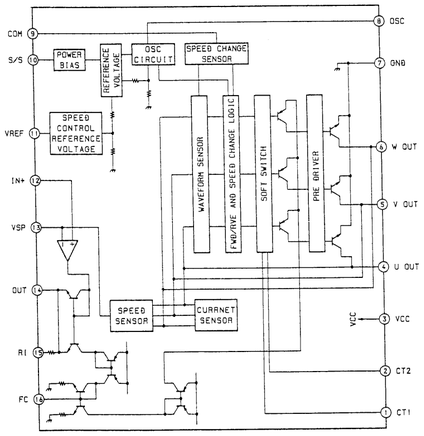
IC351 NJM2185V



IC301 LA4585M



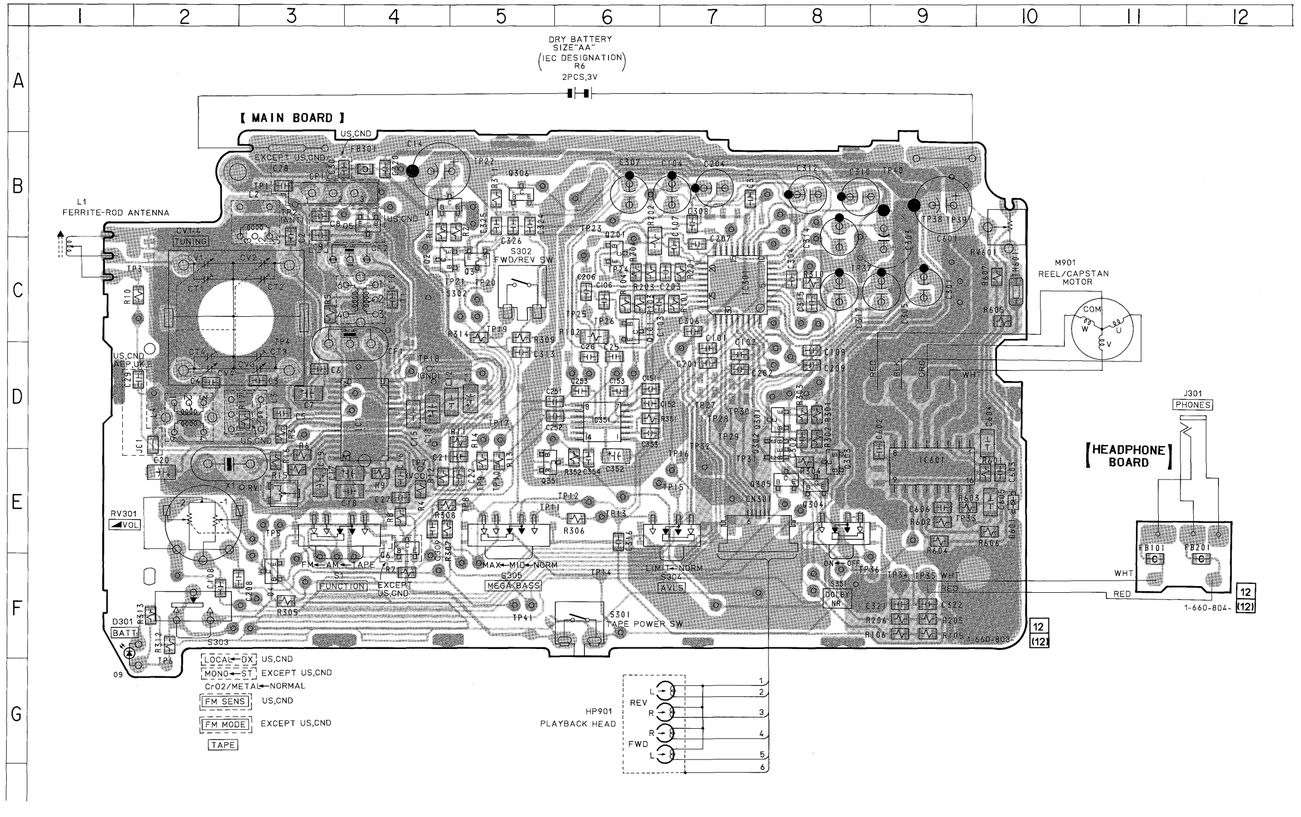
IC601 LB1879M



• Semiconductor Location

Ref. No.	Location
D301	F-1
D601	E-10
IC1	D-4
IC301	C-7
IC351	D-6
IC601	E-9
Q1	B-4
Q2	C-4
Q3	C-5
Q4	F-3
Q5	B-4
Q6	E-4
Q101	C-6
Q201	C-6
Q301	D-8
Q302	E-8
Q303	E-8
Q304	E-8
Q305	E-8
Q306	B-5
Q351	E-5

5-1. PRINTED WIRING BOARD

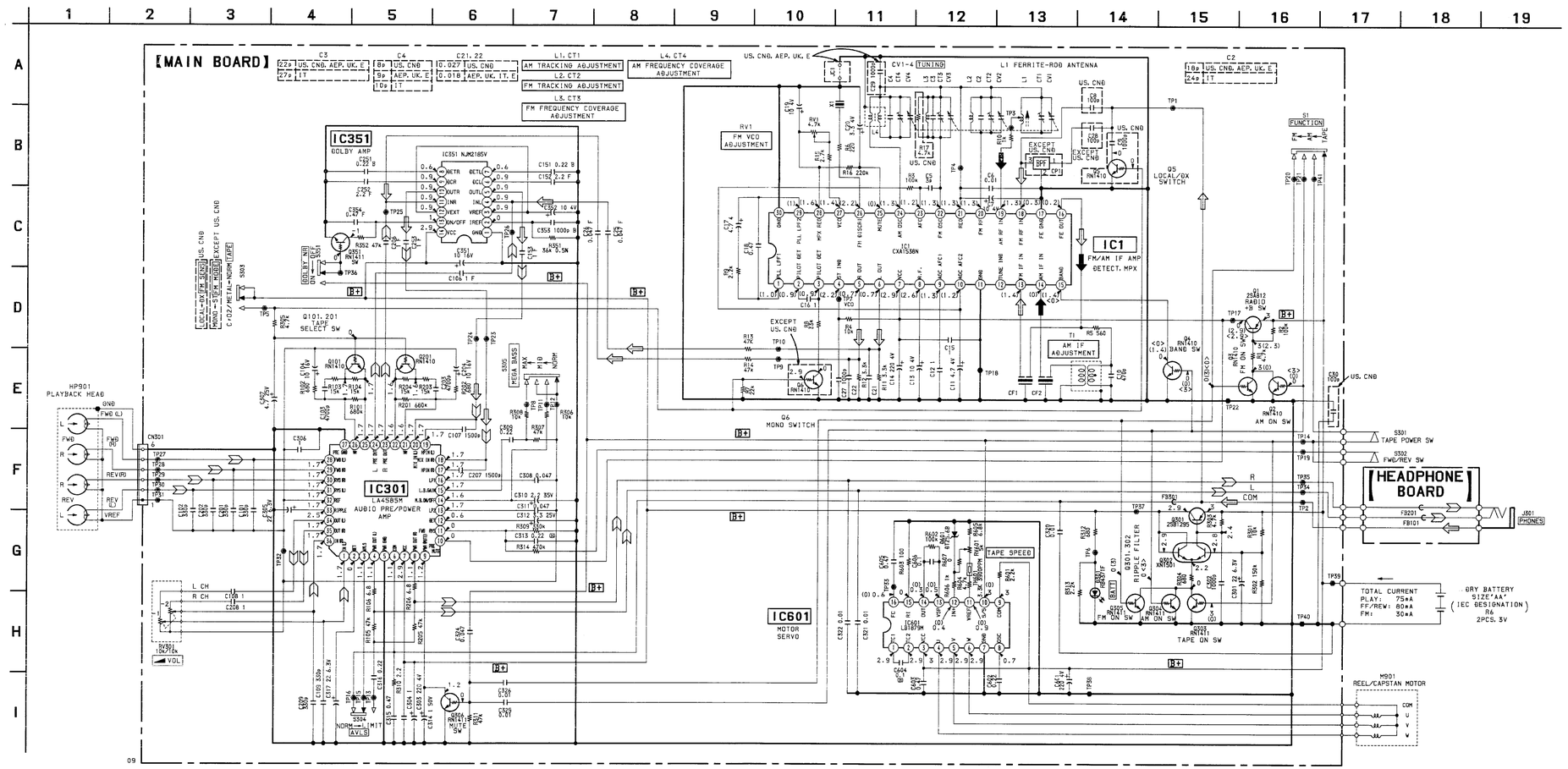


Note:

- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ○ : Through hole.
- ▒▒ : Pattern from the side which enable seeing.
- ▒▒ : Pattern of the rear side.

- Abbreviation
  CND: Canadian model.

5-2. SCHEMATIC DIAGRAM



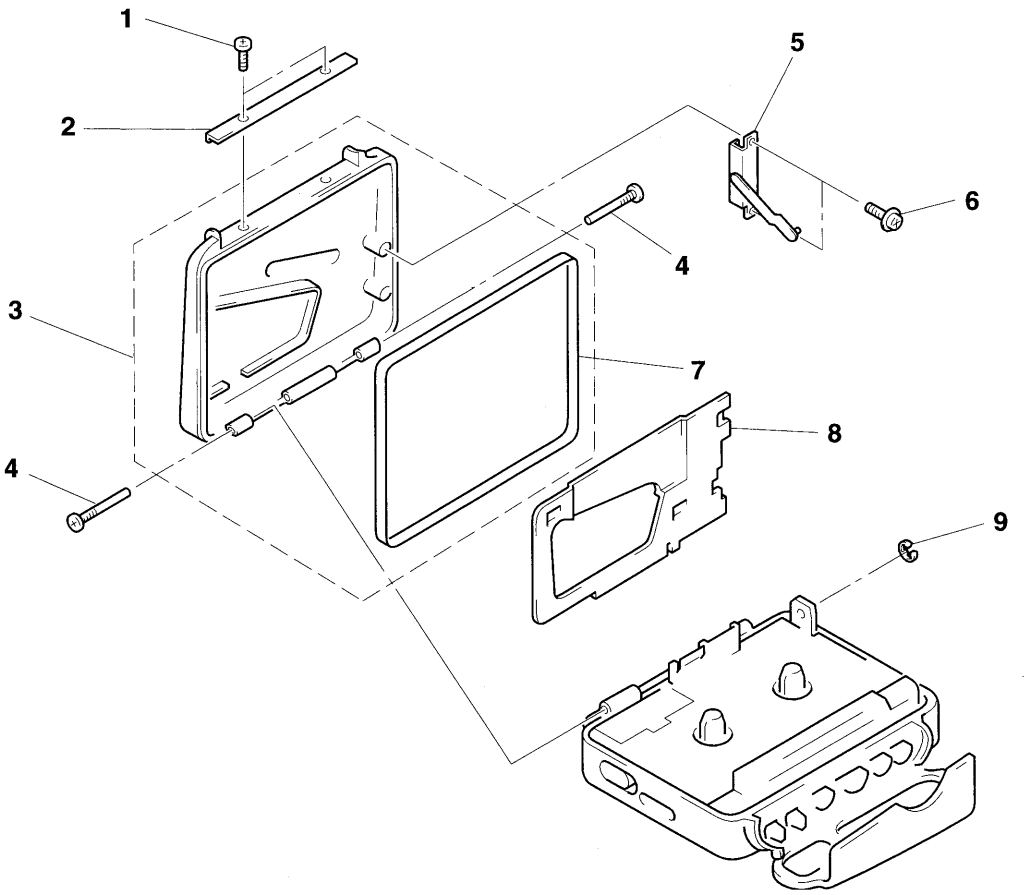
NOTE

- All capacitors are in μF unless otherwise noted. pF: μμF
  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- % : indicates tolerance.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground under no-signal (deturned) conditions.
  no mark: PLAY
  ( ): FM
  < >: AM
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Total current is measured with no cassette installed.
- Abbreviation
  CND: Canadian model.
  IT : Italian model.
- Signal path.
  ⇨ : FM
  ➡ : AM
  ⇨ : PB

SECTION 6
EXPLODED VIEWS

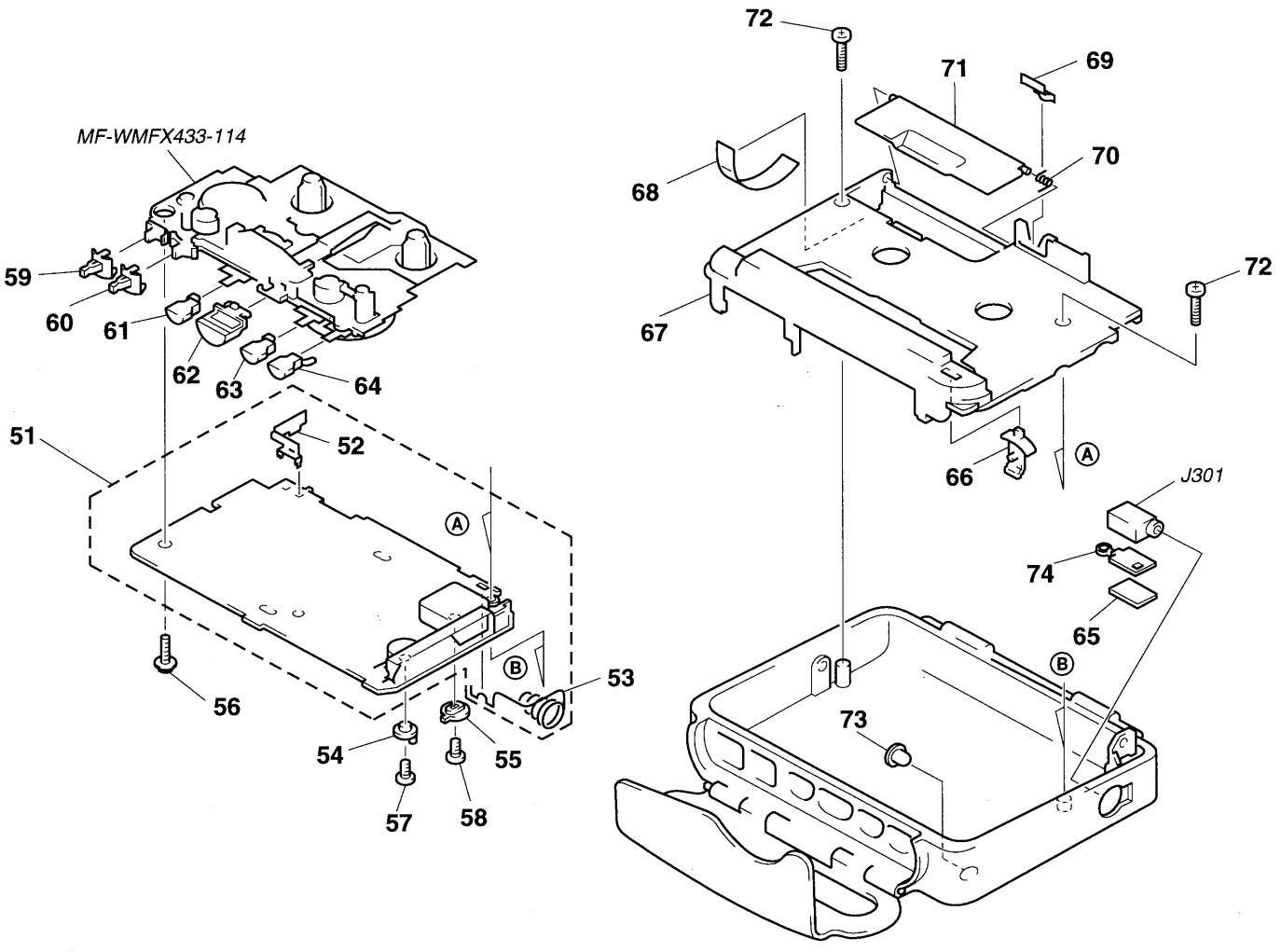
NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- The mechanical parts with no reference number in the exploded views are not supplied.
- hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  IT : Italian model

6-1. CASSETTE HOLDER SECTION



Ref. No.	Part No.	Description	Remark
1	3-704-245-71	SCREW (1.4)	
* 2	3-934-007-01	BRACKET (C)	
3	X-3372-179-1	HOLDER (CASSETTE) ASSY (YELLOW/GREEN)...(YELLOW)(FS399:US,CND)	
3	X-3372-180-1	HOLDER (CASSETTE) ASSY (YELLOW/GREEN)...(YELLOW)(FS399:AEP,UK,E)	
3	X-3372-181-1	HOLDER (CASSETTE) ASSY (YELLOW/GREEN)...(YELLOW)(FS399:IT)	
3	X-3372-187-1	HOLDER (CASSETTE) ASSY (BLACK)...(URBAN)(FS400:US,CND)	
3	X-3372-308-1	HOLDER (CASSETTE) ASSY (BLUE/GRAY)...(BLUE)(FS399:US,CND)	
3	X-3372-309-1	HOLDER (CASSETTE) ASSY (WHITE/GRAY)...(WHITE)(FS399:US,CND)	
3	X-3372-345-1	HOLDER (CASSETTE) ASSY (FS400:AEP,E)	
3	X-3372-346-1	HOLDER (CASSETTE) ASSY (FS400:AEP,E)	
3	X-3372-188-1	HOLDER (CASSETTE) ASSY (DARK-BROWN)...(GREEN)(FS400:US,CND)	
4	3-386-373-01	SCREW, TAPPING	
5	X-3369-989-1	ARM ASSY	
6	3-318-201-01	SCREW (B)(1.4X3), TAPPING	
7	3-934-016-01	PACKING (CABINET) (FS399:US,CND,AEP,UK,E/FS400)	
8	3-934-008-01	COVER (FS399)	
8	3-934-008-11	COVER (BLACK)...(URBAN)(FS400)	
8	3-934-008-21	COVER (GREEN)...(OUT DOOR)(FS400)	
9	7-624-101-04	STOP RING 1.2 (E TYPE)	

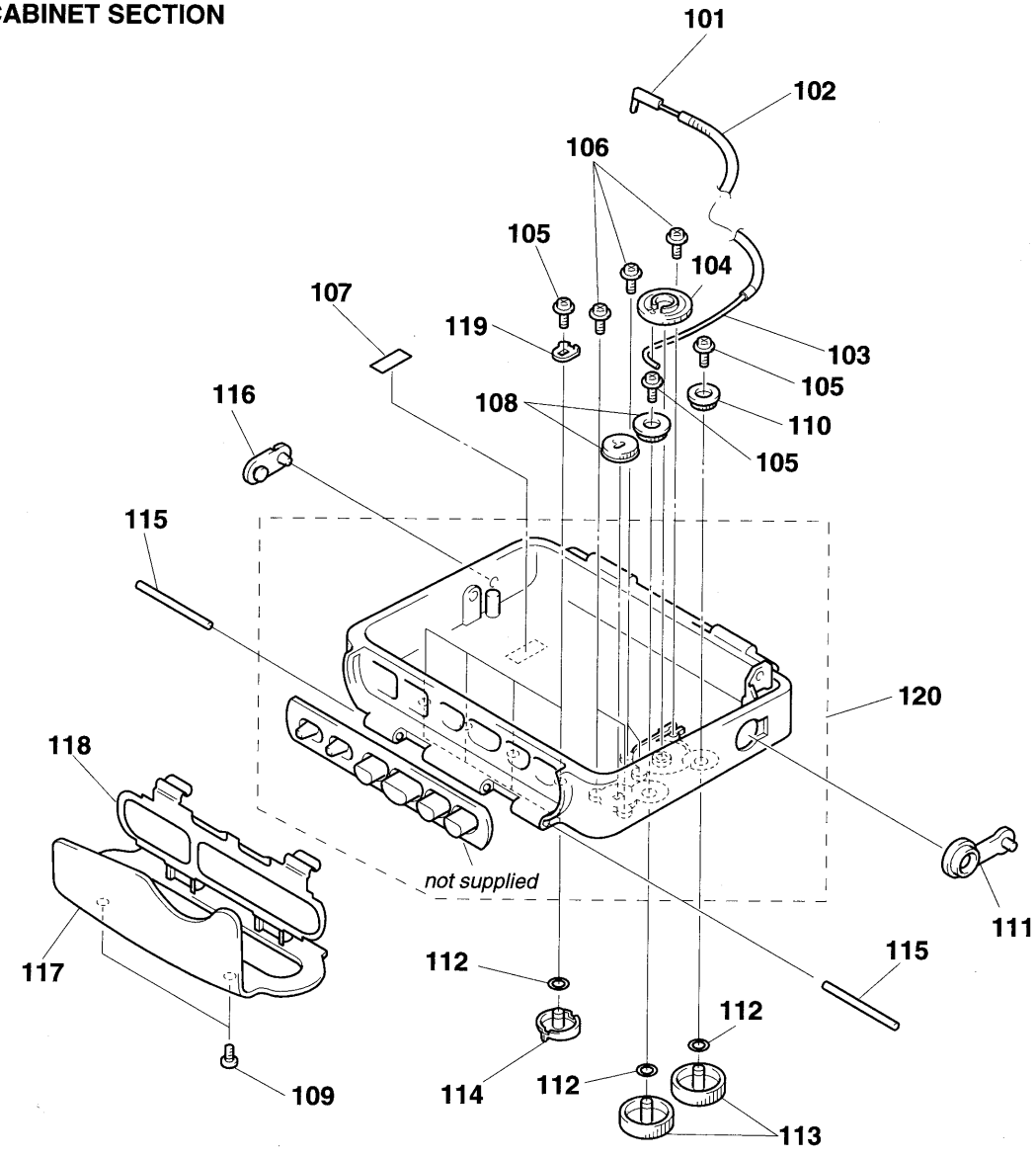
6-2. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark
51	A-3016-823-A	MAIN BOARD, COMPLETE (US,CND)	
51	A-3016-824-A	MAIN BOARD, COMPLETE (AEP,UK,E)	
51	A-3016-825-A	MAIN BOARD, COMPLETE (FS399:IT)	
52	3-921-878-01	TERMINAL BOARD, BATTERY	
53	3-934-017-01	TERMINAL (-), BATTERY	
54	3-934-023-01	JOINT (VOL)	
55	3-934-003-01	JOINT (TUNE)	
56	3-921-955-01	SCREW (M1.4), TOOTH (WH)	
57	3-389-883-01	SCREW (1.4)(FS400:AEP,E)	
57	7-627-850-67	SCREW,PRECISION +P 1.4X4	(FS399/FS400:US,CND)
58	3-386-374-01	SCREW (1.7)	
59	3-921-864-01	KNOB (MODE)	
60	3-921-863-01	KNOB (DIR)	
61	3-921-862-01	BUTTON (REW)	
62	3-921-859-01	BUTTON (PLAY)	
63	3-921-861-01	BUTTON (FF)	
64	3-921-860-01	BUTTON (STOP)	
65	1-660-804-11	HEADPHONE BOARD	

Ref. No.	Part No.	Description	Remark
66	3-934-005-01	KNOB (DX-LOCAL)	
67	3-933-995-01	CHASSIS (FS399:US,CND)	
67	3-933-995-11	CHASSIS (BLACK)...(URBAN)(FS400:US,CND)	
67	3-933-995-21	CHASSIS (GREEN)...(OUT DOOR)	(FS400:US,CND)
67	3-933-995-31	CHASSIS (FS399:AEP,UK,E,IT)	
67	3-933-995-51	CHASSIS (BLACK)...(URBAN)(FS400:AEP,E)	
67	3-933-995-61	CHASSIS (GREEN)...(OUT DOOR)(FS400:AEP,E)	
68	3-934-185-11	SHEET, BATTERY	
69	3-351-153-01	SPRING	
70	3-936-792-01	SPRING, TORSION	
71	3-934-020-01	LID, BATTERY CASE (FS399)	
71	3-934-020-11	LID, BATTERY CASE (BLACK)...(URBAN) (FS400)	
71	3-934-020-21	LID, BATTERY CASE (GREEN)...(OUT DOOR)	(FS400)
72	3-318-203-31	SCREW (B1.7X8), TAPPING	
73	3-914-156-01	WINDOW, LED	
* 74	3-922-444-01	TERMINAL BOARD, ANTENNA	
J301	1-563-298-11	JACK (SMALL TYPE) (DIA. 3.5)(PHONES)	

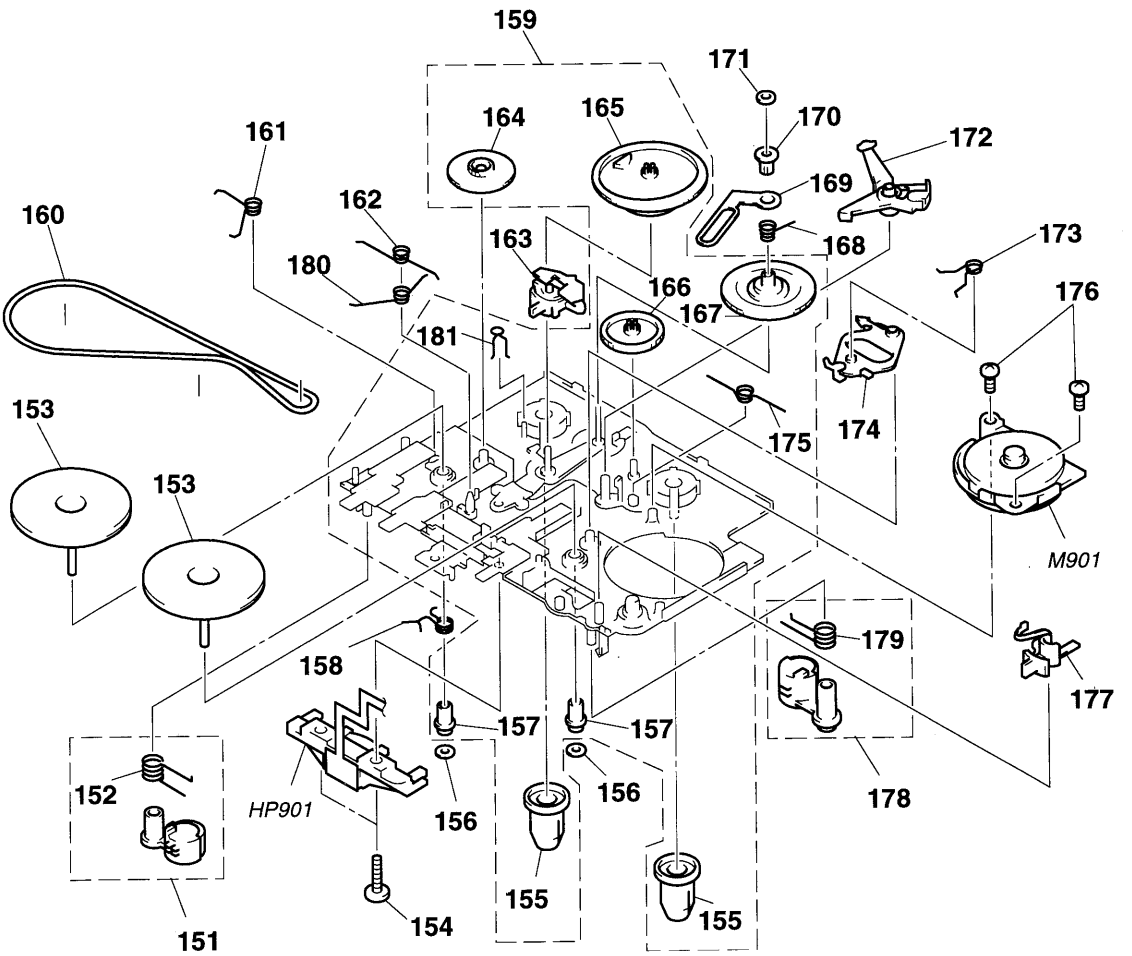
6-3. REAR CABINET SECTION



Ref. No.	Part No.	Description	Remark
101	3-934-006-01	POINTER	
102	X-3371-871-1	OUTER ASSY	
103	3-933-992-01	WIRE	
104	3-934-001-01	GEAR (A)	
105	3-318-201-01	SCREW (B)(1.4X3), TAPPING	
106	3-381-629-11	SCREW, (B)(1.4X3), TAPPING	
107	3-831-441-XX	SPACER, KNOB	
108	3-934-002-01	GEAR (VOL)	
109	3-704-244-61	SCREW (P1.7X4.0)	
110	3-934-021-01	GEAR (B)	
111	3-386-371-01	PACKING, HP JACK	
112	3-326-560-02	RING (DIA. 2.5XDIA. 4.5), O	
113	3-933-999-01	KNOB (VOL.TUNE)(FS399)	
113	3-933-999-11	KNOB (VOL.TUNE)(RED)...(URBAN)(FS400)	
113	3-933-999-21	KNOB (VOL.TUNE)(BLACK)...(OUT DOOR)(FS400)	
114	3-934-000-01	KNOB (FUNCTION)(FS399)	
114	3-934-000-11	KNOB (FUNCTION)(RED)...(URBAN)(FS400)	
114	3-934-000-21	KNOB (FUNCTION)(BLACK)...(OUT DOOR)(FS400)	
115	3-936-847-01	SHAFT	
116	3-922-447-01	PACKING, DC JACK	

Ref. No.	Part No.	Description	Remark
117	3-934-014-01	BUCKLE (FS399)	
117	3-934-014-11	BUCKLE (BLACK)...(URBAN)(FS400)	
117	3-934-014-21	BUCKLE (GREEN)...(OUT DOOR)(FS400)	
* 118	3-934-009-01	BRACKET (B)	
119	3-934-022-01	JOINT (AVLS)	
120	X-3372-591-1	CABINET ASSY, REAR (GREEN)...(OUT DOOR)	(FS400:US,CND,E:TYPE 1)
120	X-3372-636-1	CABINET ASSY, REAR (GREEN)...(OUT DOOR)	(FS400:E:TYPE 2)
120	X-3372-592-1	CABINET ASSY, REAR (BLACK)...(URBAN)	(FS400:US,CND,E:TYPE 1)
120	X-3372-637-1	CABINET ASSY, REAR (BLACK)...(URBAN)	(FS400:E:TYPE 2)
120	X-3372-593-1	CABINET ASSY, REAR (GREEN)...(OUT DOOR)	(FS400:AEP)
120	X-3372-594-1	CABINET ASSY, REAR (BLACK)...(URBAN)	(FS400:AEP)
120	X-3372-021-1	CABINET ASSY, REAR (GRAY)	(FS399:US,CND,E:TYPE 1)
120	X-3372-022-1	CABINET ASSY, REAR (GRAY)(FS399:AEP,UK,IT)	
120	X-3372-023-1	CABINET ASSY, REAR (GRAY)(FS399:E:TYPE 2)	

6-4. MECHANISM SECTION (MF-WMFX433-114)



Ref. No.	Part No.	Description	Remark
151	X-3369-749-1	PINCH LEVER (N) ASSY	
152	3-920-996-01	SPRING (PINCH N)	
153	X-3369-747-1	WHEEL ASSY, CAPSTAN	
154	3-704-197-71	SCREW (M1.4)	
155	3-921-042-01	GEAR (REEL)	
156	3-921-797-01	WASHER	
157	3-921-003-01	BEARING	
158	3-920-993-01	SPRING (NR)	
159	X-3371-589-1	CHASSIS (COPM) ASSY	
160	3-354-868-11	BELT	
161	3-920-992-01	SPRING (STOP)	
162	3-920-991-01	SPRING (FR)	
163	3-921-053-01	LEVER, D SELECTION	
164	3-921-043-01	GEAR (D)	
165	X-3369-752-1	CLUTCH ASSY	
166	3-920-999-01	GEAR (A)	
167	3-921-050-01	GEAR (B)	

Ref. No.	Part No.	Description	Remark
168	3-920-990-01	SPRING (UD), COMPRESSION	
169	3-921-335-01	WASHER, LEVER	
170	3-923-530-01	SLEEVE (M)	
171	3-728-091-01	WASHER, STOPPER	
172	3-921-052-01	LEVER (A), DETECTION	
173	3-920-994-11	SPRING (D SELECTION)	
174	3-921-022-01	LEVER (B), DETECTION	
175	3-920-995-11	SPRING (PLAY)	
176	3-703-816-31	SCREW (M1.4), SPECIAL HEAD	
177	3-921-023-01	LEVER, M SELECTION	
178	X-3369-748-1	PINCH LEVER (R) ASSY	
179	3-920-997-01	SPRING (PINCH R)	
180	3-931-387-01	SPRING (SW)	
181	3-933-324-01	SPRING (FR LEVER)	
HP901	1-500-205-11	HEAD, MAGNETIC (PLAYBACK)	
M901	1-698-457-11	MOTOR (REEL/CAPSTAN)	

HEADPHONE **MAIN**

SECTION 7
ELECTRICAL PARTS LIST

Note:

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μ A..., uPA...: μ PA..., uPB...: μ PB..., uPC...: μ PC..., uPD...: μ PD...
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  CND : Canadian model
  IT : Italian model

Ref. No.	Part No.	Description			Remark
	1-660-804-11	HEADPHONE BOARD			
		**********			
*	3-922-444-01	TERMINAL BOARD, ANTENNA			
		< FERRITE BEAD >			
FB101	1-414-235-11	INDUCTOR, FERRITE BEAD			
FB201	1-414-235-11	INDUCTOR, FERRITE BEAD			
		< JACK >			
J301	1-563-298-11	JACK (SMALL TYPE) (DIA. 3.5)(PHONES)			
**********					
	A-3016-823-A	MAIN BOARD, COMPLETE (US,CND)			
		**********			
	A-3016-824-A	MAIN BOARD, COMPLETE (AEP,UK,E)			
		**********			
	A-3016-825-A	MAIN BOARD, COMPLETE (FS399:IT)			
		**********			
	3-921-878-01	TERMINAL BOARD, BATTERY			
	3-934-017-01	TERMINAL (-), BATTERY			
		< CAPACITOR >			
C2	1-163-099-00	CERAMIC CHIP	18PF	5% 50V (FS399:US,CND,AEP,UK,E/FS400)	
C2	1-163-102-00	CERAMIC CHIP	24PF	5% 50V (FS399:IT)	
C3	1-163-101-00	CERAMIC CHIP	22PF	5% 50V (FS399:US,CND,AEP,UK,E/FS400)	
C3	1-163-103-00	CERAMIC CHIP	27PF	5% 50V (FS399:IT)	
C4	1-163-091-00	CERAMIC CHIP	8PF	50V (US,CND)	
C4	1-163-092-00	CERAMIC CHIP	9PF	0.25PF 50V (AEP,UK,E)	
C4	1-163-093-00	CERAMIC CHIP	10PF	5% 50V (FS399:IT)	
C5	1-163-086-00	CERAMIC CHIP	3PF	50V	
C6	1-164-232-11	CERAMIC CHIP	0.01uF	50V	
C7	1-135-201-11	TANTALUM CHIP	10uF	20% 4V	
C8	1-163-117-00	CERAMIC CHIP	100PF	5% 50V (US,CND)	

Ref. No.	Part No.	Description			Remark
C9	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V (US,CND)	
C10	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C11	1-135-151-21	TANTALUM CHIP	4.7uF	20% 4V	
C12	1-162-638-11	CERAMIC CHIP	1uF	16V	
C13	1-135-201-11	TANTALUM CHIP	10uF	20% 4V	
C14	1-124-434-00	ELECT	220uF	20% 4V	
C15	1-162-638-11	CERAMIC CHIP	1uF	16V	
C16	1-164-346-11	CERAMIC CHIP	1uF	16V	
C17	1-135-151-21	TANTALUM CHIP	4.7uF	20% 4V	
C18	1-165-320-11	CERAMIC CHIP	0.47uF	10% 16V	
C19	1-135-201-11	TANTALUM CHIP	10uF	20% 4V	
C20	1-135-221-11	TANTAL. CHIP	3.3uF	20% 4V	
C21	1-163-024-00	CERAMIC CHIP	0.018uF	10% 50V (FS399:AEP,UK,E,IT/FS400:AEP,UK,E)	
C21	1-163-986-00	CERAMIC CHIP	0.027uF	10% 25V (US,CND)	
C22	1-163-024-00	CERAMIC CHIP	0.018uF	10% 50V (FS399:AEP,UK,E,IT/FS400:AEP,UK,E)	
C22	1-163-986-00	CERAMIC CHIP	0.027uF	10% 25V (US,CND)	
C25	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C26	1-163-035-00	CERAMIC CHIP	0.047uF	50V	
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V	
C28	1-163-117-00	CERAMIC CHIP	100PF	5% 50V (FS399:AEP,UK,E,IT/FS400:AEP,UK,E)	
C29	1-163-009-11	CERAMIC CHIP	0.001uF	10% 50V (FS399:US,CND,AEP,UK,E/FS400)	
C30	1-163-117-00	CERAMIC CHIP	100PF	5% 50V (US,CND)	
C101	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C102	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C103	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C104	1-126-157-11	ELECT	10uF	20% 16V	
C106	1-164-346-11	CERAMIC CHIP	1uF	16V	
C107	1-163-011-11	CERAMIC CHIP	0.0015uF	10% 50V	
C108	1-164-346-11	CERAMIC CHIP	1uF	16V	
C109	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C151	1-164-489-11	CERAMIC CHIP	0.22uF	10% 16V	
C152	1-164-505-11	CERAMIC CHIP	2.2uF	16V	
C153	1-164-346-11	CERAMIC CHIP	1uF	16V	
C201	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C202	1-163-003-11	CERAMIC CHIP	330PF	10% 50V	
C203	1-163-017-00	CERAMIC CHIP	0.0047uF	5% 50V	
C204	1-126-157-11	ELECT	10uF	20% 16V	

Ref. No.	Part No.	Description			Remark
C206	1-164-346-11	CERAMIC CHIP	1uF		16V
C207	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C208	1-164-346-11	CERAMIC CHIP	1uF		16V
C209	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C251	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C252	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C253	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-126-153-11	ELECT	22uF	20%	6.3V
C302	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-124-434-00	ELECT	220uF	20%	4V
C304	1-164-346-11	CERAMIC CHIP	1uF		16V
C305	1-126-153-11	ELECT	22uF	20%	6.3V
C306	1-164-346-11	CERAMIC CHIP	1uF		16V
C307	1-124-273-00	ELECT	4.7uF	20%	25V
C308	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C309	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C310	1-124-257-00	ELECT	2.2uF	20%	50V
C311	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C312	1-126-162-11	ELECT	3.3uF	20%	50V
C313	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C314	1-104-411-11	ELECT	1uF	20%	50V
C315	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C316	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C317	1-126-153-11	ELECT	22uF	20%	6.3V
C320	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C321	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C322	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C324	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C325	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C326	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C351	1-126-157-11	ELECT	10uF	20%	16V
C352	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C353	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C354	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C601	1-124-434-00	ELECT	220uF	20%	4V
C602	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C603	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C604	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C605	1-165-320-11	CERAMIC CHIP	0.47uF	10%	16V
C606	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
		< FILTER >			
CF1	1-567-166-00	FILTER, CERAMIC			
CF2	1-760-983-11	FILTER, CERAMIC			
		< CONNECTOR >			
CN301	1-766-819-11	CONNECTOR, FPC (ZIF) 6P			
		< COMPOSITION CIRCUIT BLOCK >			
CP1	1-236-711-21	FILTER, BAND PASS (FS399:AEP,UK,E,IT/FS400:AEP,E)			

Ref. No.	Part No.	Description	Remark
		< VARIABLE CAPACITOR >	
CV1-4	1-151-653-11	CAP, VARIABLE (US,CND)	
CV1-4	1-151-654-11	CAP, VARIABLE (EXCEPT US,CND)	
CT1-4	1-151-653-11	CAP, VARIABLE (US,CND)	
CT1-4	1-151-654-11	CAP, VARIABLE (EXCEPT US,CND)	
		< DIODE >	
D301	8-719-984-02	DIODE BR4371F (BATT)	
D601	8-719-977-03	DIODE DTZ5.6B	
		< FERRITE BEAD >	
FB301	1-414-235-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC1	8-752-072-12	IC CXA1538N	
IC301	8-759-332-69	IC LA4585M-TLM	
IC351	8-759-275-48	IC NJM2185V-TE2	
IC601	8-759-362-33	IC LB1879M-TE-L	
		< JUMPER RESISTOR >	
JC1	1-216-295-91	CONDUCTOR, CHIP (2012) (FS399:US,CND,AEP,UK,E/FS400)	
		< COIL >	
L1	1-501-828-11	ANTENNA, FERRITE-ROD (US,CND)	
L1	1-501-829-11	ANTENNA, FERRITE-ROD (EXCEPT US,CND)	
L2	1-411-728-11	COIL (WITH CORE)(RF) (FS399:US,CND,AEP,UK,E/FS400)	
L2	1-411-729-11	COIL (WITH CORE)(RF)(FS399:IT)	
L3	1-411-725-11	COIL (WITH CORE)(OSC) (FS399:US,CND,AEP,UK,E/FS400)	
L3	1-411-726-11	COIL (WITH CORE)(OSC)(FS399:IT)	
L4	1-411-723-11	COIL (WITH CORE)(OSC)(US,CND)	
L4	1-411-724-11	COIL (WITH CORE)(OSC)(FS399:IT)	
L4	1-411-731-11	COIL (WITH CORE)(OSC)(AEP,UK,E)	
		< TRANSISTOR >	
Q1	8-729-216-22	TRANSISTOR 2SA1162-G	
Q2	8-729-207-65	TRANSISTOR RN1410	
Q3	8-729-207-65	TRANSISTOR RN1410	
Q4	8-729-207-65	TRANSISTOR RN1410	
Q5	8-729-207-65	TRANSISTOR RN1410 (US,CND)	
Q6	8-729-207-65	TRANSISTOR RN1410 (EXCEPT US,CND)	
Q101	8-729-207-65	TRANSISTOR RN1410	
Q201	8-729-207-65	TRANSISTOR RN1410	
Q301	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q302	8-729-402-13	TRANSISTOR XN1501	
Q303	8-729-207-66	TRANSISTOR RN1411	
Q304	8-729-207-66	TRANSISTOR RN1411	
Q305	8-729-207-66	TRANSISTOR RN1411	
Q306	8-729-207-66	TRANSISTOR RN1411	
Q351	8-729-207-66	TRANSISTOR RN1411	

MAIN

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R1	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R2	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R3	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R4	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5	1-216-043-91	METAL GLAZE	560	5%	1/10W
R6	1-216-033-00	METAL CHIP	220	5%	1/10W
R7	1-216-081-00	METAL CHIP	22K	5%	1/10W
R8	1-216-085-00	METAL CHIP	33K	5%	1/10W
R9	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R10	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R11	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R12	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R13	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R14	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R15	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R16	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R17	1-216-065-00	METAL CHIP	4.7K	5%	1/10W (US,CND)
R101	1-216-117-00	METAL CHIP	680K	5%	1/10W
R102	1-216-194-00	METAL CHIP	680	5%	1/8W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-077-00	METAL CHIP	15K	5%	1/10W
R105	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R106	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R201	1-216-117-00	METAL CHIP	680K	5%	1/10W
R202	1-216-194-00	METAL CHIP	680	5%	1/8W
R203	1-216-077-00	METAL CHIP	15K	5%	1/10W
R204	1-216-077-00	METAL CHIP	15K	5%	1/10W
R205	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R206	1-216-311-00	METAL CHIP	6.8	5%	1/10W
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-101-00	METAL CHIP	150K	5%	1/10W
R303	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R304	1-216-045-00	METAL CHIP	680	5%	1/10W
R305	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-109-00	METAL CHIP	330K	5%	1/10W
R310	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R311	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R312	1-216-045-00	METAL CHIP	680	5%	1/10W
R313	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R314	1-216-113-00	METAL CHIP	470K	5%	1/10W
R351	1-216-688-11	METAL CHIP	36K	0.5%	1/10W
R352	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R601	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R602	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R603	1-216-025-91	METAL GLAZE	100	5%	1/10W
R604	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R605	1-216-069-00	METAL CHIP	6.8K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R606	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R607	1-216-295-91	CONDUCTOR, CHIP (2012)			
		< VARIABLE RESISTOR >			
RV1	1-238-663-11	RES, ADJ, CERMET 4.7K			
RV301	1-225-184-11	RES, VAR, CARBON 10K/10K (◢ VOL)			
RV601	1-230-720-11	RES, ADJ, CARBON 5K			
		< SWITCH >			
S1	1-692-605-11	SWITCH, SLIDE (FUNCTION)			
S301	1-762-302-11	SWITCH, PUSH (1 KEY)(◀ PLAY)			
S302	1-572-288-11	SWITCH, PUSH (DIR)			
S303	1-762-624-11	SWITCH, SLIDE (TAPE) (FM MODE: EXCEPT US,CND)			
S303	1-762-624-11	SWITCH, SLIDE (TAPE)(FM SENS: US,CND)			
S304	1-692-430-41	SWITCH, SLIDE (AVLS)			
S305	1-692-605-11	SWITCH, SLIDE (MEGA BASS)			
S351	1-692-430-41	SWITCH, SLIDE (DOLBY NR)			
		< TRANSFORMER >			
T1	1-411-722-11	TRANSFORMER, IF			
		< THERMISTOR >			
TH601	1-810-794-11	THERMISTOR, POSITIVE			
		< VIBRATOR >			
X1	1-567-166-00	FILTER, CERAMIC			
**********					
		MISCELLANEOUS			
		**********			
HP901	1-500-205-11	HEAD, MAGNETIC (PLAY BACK)			
J301	1-563-298-11	JACK (SMALL TYPE)(DIA. 3.5)(PHONES)			
M901	1-698-457-11	MOTOR (REEL/CAPSTAN)			
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Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-326-162-02	WASHER, POLYETHYLENE, SLIT	
	3-378-331-01	SCREW, CARRYING CASE (FS399)	
	3-378-331-21	SCREW, CARRYING CASE (URBAN)(FS400)	
	3-378-331-31	SCREW, CARRYING CASE (OUTDOOR)(FS400)	
	3-810-951-11	MANUAL, INSTRUCTION (ENGLISH)(US)	
	3-810-951-21	MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,SPANISH) (FS399:AEP,UK,IT/FS400:AEP)	
	3-810-951-32	MANUAL, INSTRUCTION (ENGLISH,SWEDISH,ITALIAN,PORTUGUESE) (FS399:AEP,UK,IT/FS400:AEP)	
	3-810-951-41	MANUAL, INSTRUCTION (ENGLISH,SPANISH,CHAINESE,KOREAN)(E)	
	3-810-951-62	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (FS399:CND/FS400:CND)	
*	3-932-311-01	INDIVIDUAL CARTON (FS399:CND)	
*	3-932-312-01	INDIVIDUAL CARTON (FS399:AEP,UK,IT,E:TYPE 1)	
*	3-932-355-01	INDIVIDUAL CARTON (FS399:E:TYPE 2)	
*	3-932-520-01	CUSHION (W.P.) (FS399:CND,AEP,UK,E,IT/FS400:AEP,E)	
	3-933-997-01	CLIP (BELT)(FS399)	
	3-933-998-01	BAND (FS399)	
	3-933-998-11	BAND (URBAN)(FS400)	
	3-933-998-21	BAND (OUTDOOR)(FS400)	
*	3-936-463-01	INDIVIDUAL CARTON (FS400:AEP,E:TYPE 1)	
	3-937-075-01	STOPPER (BUCKLE)(US)	
*	3-938-110-01	INDIVIDUAL CARTON (FS400:E:TYPE 2)	
	8-952-478-90	HEADPHONE MDR-E215/Y SET (FS399:AEP,UK,E,IT)	
	8-953-141-90	HEADPHONE MDR-W08G//O SET (FS400:US)	
	8-953-142-90	HEADPHONE MDR-W14G//K SET (YELLOW) (FS399:US,CND/FS400:CND,AEP)	
	8-953-142-91	HEADPHONE MDR-W14G/HK SET (FS400:E)	
	8-953-142-92	HEADPHONE MDR-W14G/WK SET (WHITE)(FS399:US)	
	8-953-142-93	HEADPHONE MDR-W14G/LK SET (BLUE)(FS399:US)	
	X-3372-195-1	CLIP (BELT) ASSY (URBAN)(FS400)	
	X-3372-196-1	CLIP (BELT) ASSY (OUTDOOR)(FS400)	

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